IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Application No.	10/711,277
Filing Date:	09/07/2004
Inventor (first named)	Wade Chute
Group Art Unit:	1731
Examiner Name:	Anna L. Kinney
Attorney Docket Number:	30319.472

Declaration Under 37 CFR Sec. 1.132

Province of Ontario
CANADA

I, Robert W. Hurter, hereby declare as follows:

1. I received a B.A.Sc. in Chemical Engineering from the University of Toronto in 1975 and a M.B.A. degree from University of Ottawa in 1989. I am a Professional Engineer registered with Professional Engineers Ontario, License # 21026018. I have operated my own independent consulting firm, HurterConsult Incorporated, since 1980. I have provided services internationally for the design and implementation of all types of pulp and paper mills and fiberboard mills based on wood, wastepaper and nonwood plant fiber raw materials. In the interest of full disclosure, I am a consultant to Alberta Research Council Inc., the assignee of the above noted patent application. However, the contents of this declaration are the result of my independent study of the matters discussed herein and are bias-free.

2. I am a co-inventor of the invention which is the subject of U.S Patent No. 6,302,997 entitled "Process for Producing a Pulp Suitable for Papermaking from Nonwood Fibrous Materials" (the '997 Patent). I understand my '997 Patent has been cited against the above noted patent application, as an obstacle to patentability.

3. I have been advised by Mr. Edward Yoo that he is a patent agent representing the Applicant noted above with respect to the U.S. patent application noted above. I understand that the patent claims at issue involve a process of desilicating nonwood plant fibres.

4. The research which led to the '997 Patent focused on the pulping process necessary to produce pulp suitable for papermaking from nonwood sources such as corn stalks and wheat straw. There is no consideration in our '997 Patent for removal of silicate from the material to be pulped. We did not address that matter. The first step in our process was a mild alkaline extraction process, intended to remove lignin. We described the use of alkali in the amount of 10% weight to about 30% weight on oven dried fiber (ODF) and preferably from about 12% weight to about 15% weight ODF (column 7, lines 6-8). At this alkaline dosage using NaOH or KOH, a person skilled in the art would know that this dosage would result in a pH in the range of 12 – 14. This elevated pH is necessary to dissolve lignin.

5. The present application is not aimed at delignification but, rather, desilication. One skilled in the art would be aware that silica dissolves in a pH range of about 7 – 11, which is not sufficiently alkaline to dissolve substantial amounts of lignin. In the present application, lignin is dealt after the pre-pulping desilication process in known pulping and bleaching techniques, such as that disclosed in the '997 Patent. One skilled in the art would understand the term "prepulping" would refer to a process or treatment which preceded a pulping process such as that disclosed in the '997 Patent.

6. To further illustrate the difference, in the mild alkaline extraction stage in the '997 Patent, an alkaline stage horizontal tube digester (Fig. 2, item 40) is used whereas the Applicant teaches using a hydrapulper (paragraph 19). A person skilled in the art would know that these pieces of equipment are materially different and have substantially differing uses and applications. A person skilled in the art would know that the alkaline stage horizontal tube digester (Fig. 2, item 40) functions as a digesting unit in which lignin is removed at the alkali dosage and temperature described in the '997 Patent. A person skilled in the art would know that a hydrapulper is a unit that allows for the mixing of a fluid with the fiber raw material without

any digesting without any lignin removal at the alkali dosage and temperatures described in the present application.

7. In the mild alkaline extraction stage of the '997 Patent, approximately 40 - 50% of the weight of the nonwood fiber source material is lost in this stage (column 7, lines 57-59). This clearly indicates that this stage is in fact a digesting or pulping stage. Under the conditions described in the present application, one skilled in the art would not expect such a significant loss of mass, as a majority of the lignin would remain in the fiber material. This is indicative of a pre-pulping stage involving preparation of the fiber material before actual pulping or digestion.

8. In the mild alkaline extraction stage of the '997 Patent, a refiner is used (Fig. 2, item 46). While the present application also refers to the use of a refiner (Fig. 1, item 16), one skilled in the art would know that the functions of these refiners are materially different. In the case of the '997 Patent, the refiner is used to break up any fiber bundles remaining after digesting to remove lignin. However, in the case of the present application, the refiner is used to open up the structure of the raw material to allow for the penetration of alkali to remove silicates, but not lignin, as well as to break up the epidermal portion of the raw material so that it can be removed.

9. I conclude, after careful review of my previous '997 Patent, and the present application, that the pre-pulping desilication process described in the present application is materially different, and in my view non-obvious, from the mild alkaline extraction described in the '997 Patent. In summary, it is a milder pH process intended to remove silicates prior to pulping or digestion. The mild alkaline extraction of the '997 Patent is a more alkaline process intended to delignify the fibers. The '997 Patent does not specifically teach or suggest desilication by any means or process.

10. I make this Declaration at the request of the Applicant noted above, in support of the patent application noted above.

11. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 USC 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DECLARED this 3rd day of January, 2006 at the City of Ottawa, Province of Ontario, Canada.

Robert W. Hurter, MBA, P. Eng.